

App. No. 09/720998
Office Action Dated April 6, 2004
Amd. Dated September 29, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Claim 11 is canceled without prejudice or disclaimer.

Claims 1 and 12 are amended.

Listing of Claims:

1. (Currently Amended) A multimodal polyethylene composition for pipes, which multimodal polyethylene has a density of 0.930-0.965 g/cm³ and an MFR₅ of 0.2-1.2 g/10 min, characterized in that the multimodal polyethylene has an M_n of 8000-15000, an M_w of 180-330 x 10³, and an M_w/M_n of 20-35, said multimodal polyethylene comprising a low molecular weight (LMW) ethylene homopolymer fraction polymerized in the presence of a Ziegler Natta catalyst and with the addition of 350-450 moles of H₂/kmoles of ethylene and a high molecular weight (HMW) ethylene copolymer fraction polymerized in the presence of a Ziegler Natta catalyst, said HMW fraction having a lower molecular weight limit of 3500, and a weight ratio of the LMW fraction to the HMW fraction of (35-55):(65-45).

2. (Original) A multimodal polymer composition as claimed in claim 1, wherein the multimodal polymer is a bimodal polyethylene produced by (co)polymerisation in at least two steps.

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3. (Original) A multimodal polymer composition as claimed in claim 1, wherein the ethylene copolymer of the HMW fraction is a copolymer of ethylene and a comonomer selected from the group consisting of 1-butene, 1-hexene, 4-methyl-1-pentene, and 1-octene.
4. (Previously Presented) A multimodal polymer composition as claimed in claim 1, wherein the amount of comonomer is 0.4-3.5 mol% of the multimodal polymer.
5. (Previously Presented) A multimodal polymer composition according to claim 1, having a weight ratio of the LMW fraction to the HMW fraction of (43-51):(57-49).
6. (Previously Presented) A multimodal polymer composition as claimed in claim 1, wherein the multimodal polymer has an MFR₅ of 0.3-1.0 g/10 min.
7. (Original) A multimodal polymer composition as claimed in claim 1, wherein the polymer is obtained by slurry polymerisation in a loop reactor of a LMW ethylene homopolymer fraction, followed by gas-phase polymerisation of a HMW ethylene copolymer fraction.
8. (Original) A multimodal polymer composition as claimed in claim 7, wherein the slurry polymerisation is preceded by a prepolymerisation step.
9. (Original) A multimodal polymer composition as claimed in claim 8, wherein the polymer is obtained by prepolymerisation in a loop reactor, followed by slurry polymerisation in a loop reactor of a LMW ethylene homopolymer fraction, and gas-phase polymerisation of a HMW ethylene copolymer fraction.

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10. (Previously Presented) A multimodal polymer composition as claimed in claim 7, wherein polymerisation procatalyst and cocatalyst are added to the first polymerisation reactor only.

11. (Canceled)

12. (Currently Amended) A pipe characterised in that it is a pressure pipe comprising the multimodal polymer composition according to ~~any one of the preceding claim~~[[s]] 1, which pipe withstands a pressure of 8.0 MPa gauge during 50 years at 20° C (MRS8.0).

13. (Original) A pipe as claimed in claim 12, wherein the pipe is a pressure pipe withstanding a pressure of 10 MPa gauge during 50 years at 20° C (MRS10.0).

14. (Previously Presented) A pipe as claimed in claim 12, wherein the pipe has a rapid crack propagation (RCP) S4-value of -1° C or lower.

15. (Original) A pipe as claimed in claim 14, wherein the pipe has a rapid crack propagation (RCP) S4-value of -7° C or lower.

16. (Previously Presented) A multimodal polymer composition as claimed in claim 8, wherein polymerisation procatalyst and cocatalyst are added to the first polymerisation reactor only.

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17. (Previously Presented) A multimodal polymer composition as claimed in claim 9, wherein polymerisation procatalyst and cocatalyst are added to the first polymerisation reactor only.